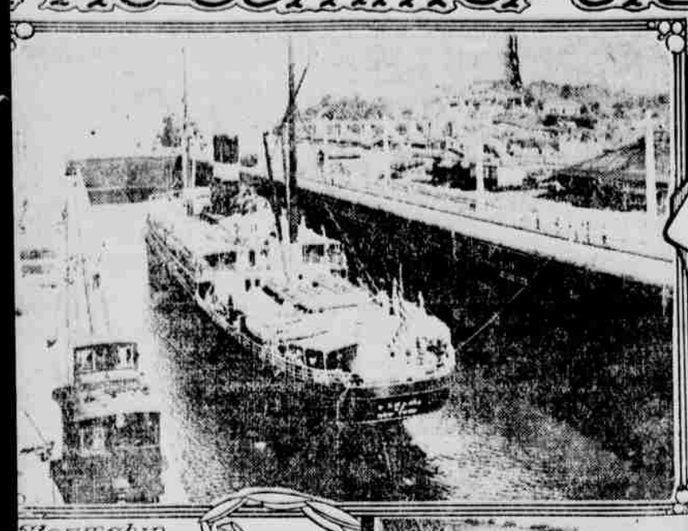
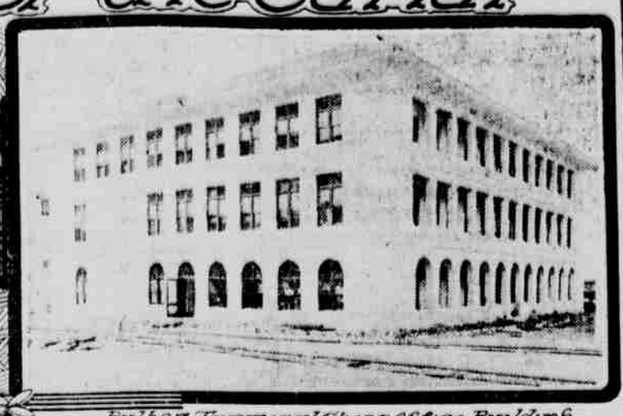
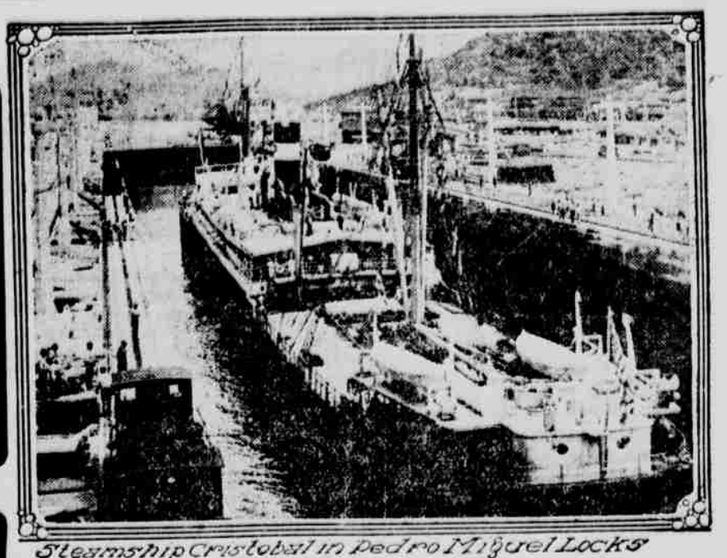
The Commercial Value of the Canal



Steamship Passing in the East Chamber of Miraflores Lock

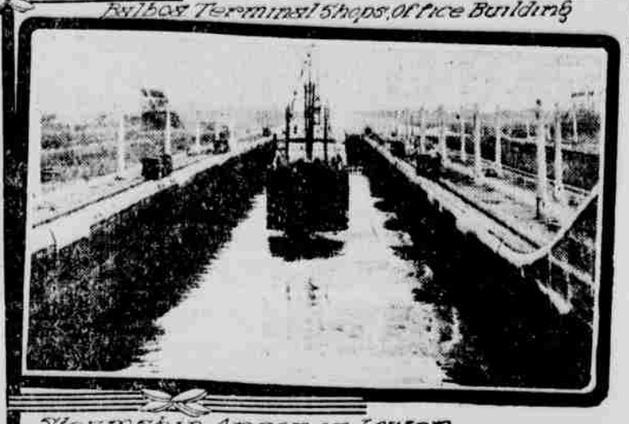


Railroad Terminal Shops, Office Building



Steamship Cristobal in Pedro Miguel Locks

First Commercial Shipment Passing through Culebra Cut



Steamship Ancon in Lower Gatun Locks

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How the Canal Is Expected To Further the Interests of "Made in America"

EVER since the days of Balboa the traders of the world have been anxious to have the narrow strip of land which divided Atlantic from the Pacific at the mus of Panama removed. For re than three centuries men have amed and planned for this great , and now that it has been accomshed our country may look forward an increasing business with the in-Americas. Heretofore the comrce of these countries has been inly with Europe—only one out of ry eight dollars spent by them in ign countries coming to the United tes—the other seven goes to rope. The American exporter by aid of the canal will be placed in osition to change the course of at st a great part of this trade to his antage. But even with the cheaper quicker transportation via the al the manufacturer must not ext this result to follow in a day. Many of the industries of the South erican countries were developed by ney from Europe. Nearly every e firm on the Continent has a nch office at the Pacific ports, and se who have no branches send speily trained travelling salesmen who ry a line of goods which caters to local taste. Furthermore, these n understand the system of credits ich prevail in Latin America and authorized to comply with these uirements—a system entirely difnt from that of the United States Europe.

Not only will the Canal enlarge our ign commerce but it will cheapen the transportation of raw material to our factories by shortening the distance over which these products must travel and by the saving of the cost of double handling. Where once the distance by water between New York and San Francisco, our two great seaports, was thirteen thousand miles, it is now only about five thousand miles. It will thus reduce the cost of transportation between these two seaports fully one-third. Added to this is the ability to send traffic through from coast to coast without unloading and reloading and will eliminate the loss of time which formerly was occasioned by the irregular steamship connections as well as avoiding the damage to goods which sometimes occurs in double handling.

An Act of Congress of August 24th, 1912, in-so-far as it dealt with coastwise trade was supposed to be beneficial to our merchant marine in that it exempted from the levy of tolls vessels engaged in the coastwise trade of the United States. But this legislation was thought by many to be in violation of some of our treaties with foreign countries, and on June 15th, 1914, this particular provision of the Act of 1912 was repealed and ships of all nations, whether engaged in coastwise or international trade, pay the same tolls under like conditions. The law at present affords ample protection to the shipper for the Canal toll law forbids any railroad to be directly interested in any ship passing through the Canal carrying freight in competition with that railroad. This provision was put in to prevent railroads from controlling steamships using the Canal and by this control fixing rates which would prevent competition with the railroads themselves.

Ships Can Save Money.

The average cost of transferring cargo across Panama, including the loading and unloading charges at the terminals, was about three dollars per cargo ton. The toll charges are from 75 cents to $1.25 per net vessel ton. It must be understood that the tolls are based upon the vessel's tonnage and not upon the cargo carried. A vessel's ton is one hundred cubic feet of space, while a cargo ton is two thousand pounds or forty cubic feet. From this it will be seen that vessels can carry between two and three tons of cargo for each net vessel ton. In actual service vessels average nearly two tons of freight per net vessel tonnage. Thus the toll fixed is from forty to sixty cents, according to the kind of cargo carried, for each ton of freight. While this may seem a high rate when paid in bulk, for the average ship will pay from $5,000 to $10,000 for its twelve-hour trip through the Canal, the ship owner is saving money on the maintenance of his ship as well as in the time he gains. He can also fill the space he was compelled to use for coal and food with cargo by recoaling and buying supplies at Panama.

The west coast of South America is cleaning up, especially Guayaquil, which was regarded as such a pest hole of disease that shippers passed it by. But now all is changed, and in a short time the fevers prevalent there will be a thing of the past, and that port expects to reap increased trade from the Canal. Chile, too, is getting ready for a larger business along that route.

On the Atlantic side as well all sorts of improvements are going on. At Jamaica the British Government is planning a great coaling station. Denmark is making extensive plans in the way of shipping facilities at the Island of St. Thomas. All along the east coast of South America there is a rejuvenation in commercial affairs.

Much to Learn.

The American business man must learn that catalogues printed in English sent to the majority of these countries are about as useful as a poem written in Chinese would be to the average American. Doing business through a native interpreter usually ends in delay and annoyance. One is surprised to find that the travelling salesman sent to these countries by England and Germany are men of splendid education who are able to speak several different languages with fluency. The United States must meet this competition as well. A vigorous attack on the markets of the Pacific countries with the Panama Canal as an aid is sure to change the commercial map of the world during the next two or three decades.

The United States is entering upon a new era in foreign trade. The transition in our commercial development of the past twenty-five years, which has transformed us from a foodstuff and raw material exporter into a manufacture exporter is forcing upon us the need of other markets where we hope to place millions of dollars worth of "Made in America" during the next few years. The great engineering feat at Panama is opening the gate to this great commercial garden now within our reach.

First Use of Canal.

The first use of the Canal for commercial purposes was made several months before the Panama Railroad ships had gone through the locks. Owing to the troubles in Mexico the Mexican National Railway stopped running and it was impossible to get the sugar which had come up from Hawaii across the Isthmus of Tehauntepec, so it was brought to Panama and sent through the Canal on barges.

The Canal was opened for commercial traffic on August 15th, 1914, when two of the big steamers operated by the Panama Railroad were sent through as a test. Both of these, the Ancon and the Cristobal, are large cement carrying steamers and their passage through Culebra Cut was looked forward to with no little interest owing to the troublesome Cucaracha slide. However, they passed through without a hitch. The "Kroonlands," a 13,075-ton vessel, was locked through the Canal on February 2nd and she was carrying a party of American business men to South America.

During a period of six months, four hundred and ninety-six vessels other than canal vessels, launches, etc., which are not counted, passed over the bridge of water carrying a total of 2,367,244 tons of cargo. It is interesting to note the route of these vessels. Those going from the Pacific coast to Europe numbered sixty-six, while only sixteen came from Europe to the Pacific coast. Sixty-nine were bound from South America to Europe, while thirty-one were on their way from Europe to South America. Two came from the Far East, bound for the Atlantic coast. Of the United States coastwise steamers ninety-seven were east bound, and one hundred and nine were west bound.

The tolls levied for that period amount to $2,126,832. Adding this to the toll collected on barges prior to August 15th, 1914, the total levy up to February 15th, 1915, brings the Canal earnings up to $2,138,442.92. It is estimated that it will require at least $13,000,000.00 per annum to make the Canal commercially self-supporting. This total is made up of $3,500,000 for operating and maintenance expenses; $250,000.00 for Zone sanitation and government; $250,000.00 to meet the annuity payable to Panama beginning with 1913; $11,250,000.00 to pay three per cent. interest on the $375,000,000.00 invested in the Canal, and $3,750,000.00 for an amortization fund of one per cent. per annum upon the cost of the Canal. This amount does not include the cost of maintaining troops on the Zone, which will probably cost another $10,000,000.00. From this it will be seen that some years must elapse before the Canal will be a paying proposition as a Canal.

Uncle Sam Shop Keeper.

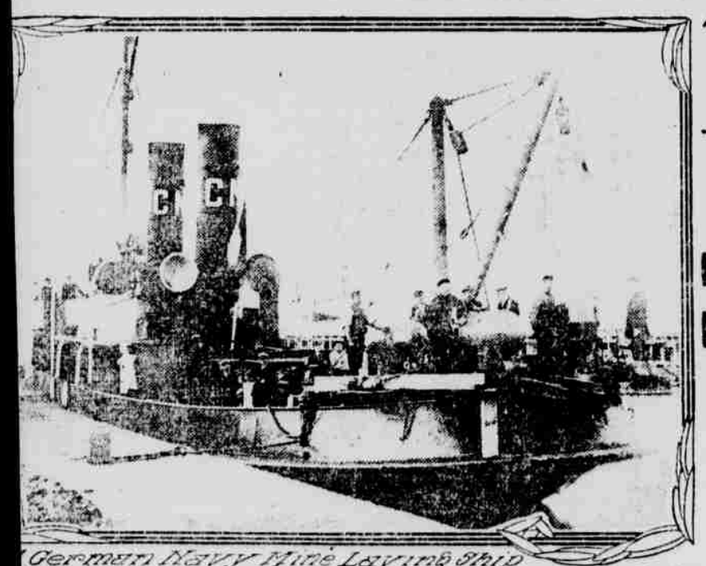
The providing of coal for passing ships is one of the problems which the Canal authorities must solve, and in order to meet this the United States Government has authorized canal colliers with a capacity of twelve thousand tons. They can deliver five hundred thousand tons per year at the Isthmus. The Navy Department declares that there must never be less than one hundred thousand tons at the Atlantic terminus and fifty thousand tons at the Pacific terminus. The Government will purchase the coal for this purpose and keep it in concrete storage basins. Half of the coal can be kept under water (for use in case of war) while the other half can be used for commercial and Government vessels. The Atlantic storage basin has a capacity of two hundred and ninety thousand tons, while the Pacific plant has a capacity of one hundred and sixty thousand tons.

Similar facilities will be provided for furnishing vessels with fuel oil. Two large tanks are to be installed at each end of the Canal, also a pipe line across the Isthmus.

The Government will keep control of the terminals water frontage and transportation by land and water across the Canal. There will be dry docks, repair shops, two powerful floating cranes with a capacity of two hundred and fifty gross tons, and even stores where Uncle Sam will be the shop-keeper. Vessels may obtain cold storage and general articles of food at reasonable prices—cheaper than they can be purchased of private concerns on the Isthmus, due to the fact that all goods imported for use in the canal workings come in duty free, while a merchant must pay the regular duty. The ships can have their laundry done while they are passing through the Canal. By going into this wholesale supply business the Government hopes to make the new waterway popular. Ship owners will soon understand that they will be free from extortion.

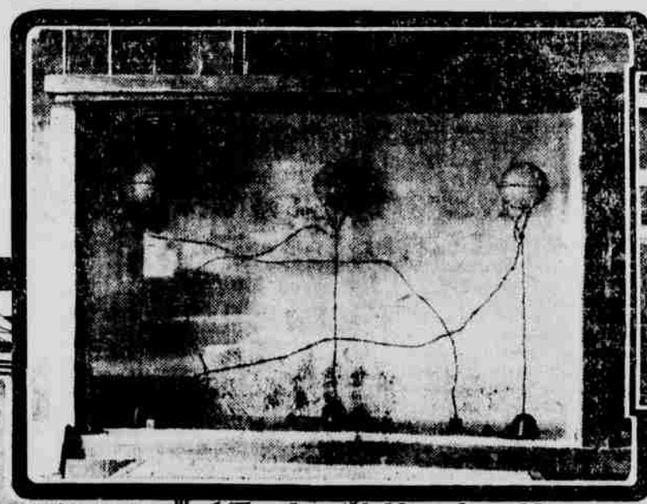
The Panama Canal was constructed to further the cause of "Made in America."

THE MINE IN WARFARE



German Navy Mine Laying Ship Leaving Wilhelmshaven to Mine the North Sea

Artist's Idea of how a Ship Looks When It is Blown Up



A Tank with Miniature Mines Showing how They are Anchored and Charted

Type of Mine Used by Spain in the Spanish American War

Awful Force of an Exploding Mine

A Submarine Detaching a Mine from Its Mooring (From a Drawing)

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The Evolution of the Mine From "Bushnell's Turtle" To the Present Day Destroyer.

THE present titanic struggle involving nearly the whole of Europe has brought to light the use of powerful destructive implements showing that the art of offensive and defensive warfare has kept pace with the advance of the sciences in other things which contribute in time of peace to their increased happiness, wealth and comfort. These engines of devastation are in a measure no respecters of persons or property and hew out their pathways of sorrow, misery and death in defiance of the teachings of civilization and the mandates of international law.

The mine, the hidden instrument of destruction, is demonstrating its power and its presence is difficult to locate and its deadly work almost impossible to prevent, especially upon the high seas.

These waters beyond the three-mile limit are the common heritage of the human race, and to plant mines beyond the territorial jurisdiction of a country should be regarded as an act of hostility toward the commerce of all nations.

However, in the present conflict in which the laws made at the Hague have been disregarded over and over, it seems that the combatants on both sides have treated the high seas adjacent to their respective seacoasts as within the "Zone of War" and have sown in the waters of the open sea these unseen, deadly weapons which work with thorough impartiality upon the innocent as well as the guilty and often and unwarned ushering into eternity through a watery grave.

First Used in 1585.

The mine is by no means a new contrivance for it dates back to the sixteenth century. History records an account of its use in naval warfare during the siege of Antwerp in 1585, when floating mines were set off against the Spaniards with no little success. The next mention made of the mine in history was its use in 1628 by the English at the siege of La Rochelle. This time the mine did little damage and "top sea" fighting was more successful.

"Bushnell's Turtle."

It was during the American Revolution that the real ancestor of this diabolical destroyer made its debut. About this time David Bushnell, a graduate of Yale College, constructed what was known as "Bushnell's Turtle." The affair was shaped like a "round clam" and was large enough for a man to sit inside and work pedals like those of a sewing machine. This kept the paddle wheels working and served as the motive power of the boat. A keg filled with gunpowder was held in place at the exterior walls and was ignited with a fuse at the psychological moment. The man then paddled away to save himself. The experiment was tried several times and one night came near being successful. A British cruiser was anchored off Staten Island and the "turtle" started on a night raid. The keg of gunpowder went off with a great noise, but owing to a miscalculation of distance it did not hit the cruiser but threw up a great mass of water and gave the British a scare.

Robert Fulton Inventor.

Robert Fulton was the next man to take up mines, and after he had destroyed a number of derelict vessels in the French harbor he tried to sell his invention to the French but they had "conscientious scruples about such a terrible contraption" and refused to use it. England likewise declared that they would not have such a terrible machine in their military equipment. Fulton then gave up the invention and, returning to America, devoted his time to steamboats.

Samuel Colt, another American, several years later devolved a scheme by which submarine mines might be exploded by electricity—a forerunner of our present coast defense.

During the Crimean War the English forgot their scruples and tried the mine but with little success. Russia had better luck and did explode a mine under the British ship "Merlin," but owing to the small charge there was not much damage done. During the Civil War mines again came into the warfare and several Federal gunboats were destroyed by the Confederates by the means of beer barrels filled with powder.

About this time the European countries began to study the submarine question, and soon started manufacturing them for themselves. Next came the Spanish-American war. Mines were laid in the various Spanish harbors, but they seem to have been valueless, as Dewey's ships passed directly over their largest mine field in going into Manila Bay.

Japanese-Russian War.

The real value of the submarine mine as a destroyer was shown in the Japanese-Russian war when by the use of torpedoes and floating mines Japan practically annihilated the Russian fleet in the Far East. England up to that time seems to have had very little faith in mines, for in 1903 that country decided to cut them out of her defense equipment. The results in Japan, however, changed her mind and she began the manufacture of the latest types and sent her experts to various places to learn how to make them more deadly. Germany's naval experts were "on the job" as well, and they soon came to the conclusion that floating submarine mines on the high seas were a necessary part of warfare.

After the torpedo attack on Port Arthur by the Japanese the Russians realized that something must be done and done quickly, or the Japanese troops might land (which they did later on) and in order to protect the port a mine layer ship was sent out to place mechanical mines in Talien Bay. Two or three days later it was discovered that one of the mines had broken loose from its moorings and a ship was sent out to destroy it, but the vessel accidentally struck the mine and was blown up. A cruiser was sent to investigate and was also badly damaged. Later more mines were laid but they were not at a proper depth and did not prevent the Japanese from landing.

The Japanese were more successful, as the Russian flagship "Petropavlorsk," with Admiral Makaroff and a crew of seven hundred men went down a few minutes after the ship struck a mine. This caused a panic in the entire Russian fleet, the officers declaring there had been a submarine attack. After this both nations strewed the sea with mines outside of territorial waters with the result that long after the war was over one occasionally heard of a ship being blown up by one of these floating mines. The Chinese were the greatest sufferers for they lost a large number of small craft.

Hague Laws Broken.

It was this danger to shipping even after the war was over which led the Hague to take up the mine question and to pass articles prohibiting the mining of the high seas, Article II., which reads as follows:

> "It is forbidden to lay automatic contact mines along the enemy's coasts or ports with the sole object of intercepting commercial navigation."

It has been violated with impunity. It seems that in the present war each nation is a law unto itself and the rights of neutrals have been entirely overlooked.

Types of Mines.

The mines used at present are of three types—first, ground mines, which are usually of large dimensions and laid directly on the bottom; second, anchored mines, which are attached by a cable to a weight on the bottom and are designed to float at a predetermined depth so that they can be touched and exploded by passing ships. The third type are the ones which are dropped on the surface of the water. The majority of the mines planted during this war are of the second type and are so arranged as to be discharged automatically when struck by a passing ship. Sometimes these break loose from their moorings and are cast upon some coast.

The type of mine now so popular in coast defense is what is known as the fixed mine, and whole channels are strewn with them. They are connected with a secret station on shore and the operator may blow up a hostile ship by simply pressing a button. This mode of coast defense has been accepted by all nations.

Audacious Sunk.

Many ships have been sunk by the floating mines, but the greatest loss was the British dreadnought "Audacious," which struck a mine off the north coast of Ireland and was sunk. This great vessel was one of England's newest ships and was of the four of the King George V. class, and was built at the cost of $13,000,000.00. She was among the fleet which was lying off Great Britain ready to make a dash should the German fleet attempt to come into the open sea. The mine has taken its toll from the German ships as well, while a few neutral vessels have paid the penalty for venturing into the hornets' nest.

Mines have not been confined to the waters of the North Sea, for they are to be found in the Baltic, Adriatic and Black Seas as well. In the Far East at Kiao Chow they have been none the less deadly in their action.

Land Mines.

The land mine is still another type which is being used in Europe. The first one dated back to 1503, during the siege of Castello del 'Uoro in the Bay of Naples, which a French garrison had succeeded in holding for three years against the combined Spanish and Napoleonic forces. At last the Spanish captain, Pedro Navarro, made a gallery into the rocks which he stowed with powder. It was exploded and many of the besiegers were hurled into the sea, and there was an immediate capture of the place.

From time to time this mining under the enemy's camps or fortress continued. Engineers of all ages have worked and planned this tunnelling until today it is well nigh perfect, and the tunnelling under each other's trenches and blowing them up has become common in Europe and frequently whole companies are buried beneath tons of earth as the result.

So, it seems that one of the aims of man's progress in the arts and sciences is to discover some subtle, unseen and tremendous force for the destruction of his fellow man, and side by side humanity works and toils—one element to provide the means of alleviating pain and suffering, to prolong human life and to uplift with increased comforts and broadening views of each other's rights and duties, while another element is inventing the quickest and most powerful instruments to destroy human life, to incapacitate in greater numbers and to cause increased havoc and loss to millions of helpless and innocent persons. Surely, this is one of the strange contrasts of the so-called civilized humanitarian age in which we live.